UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1996-0662

September, 26 1996

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Re: Biological Opinion on Ongoing and Proposed (through 12/31/96} Actions Affecting Umpqua River Cutthroat Trout

Dear Messieurs:

Attached is the National Marine Fisheries Service's (NMFS} Endangered, Species Act (ESA} section 7 biological opinion (Opinion} on ongoing and proposed actions (through 12/31/96} on the Umpqua, Siskiyou, and Siuslaw National Forests and the Roseburg, Medford, and Coos Bay Bureau of Land Management (BLM} Districts. Actions covered by this Opinion are those determined by the Level 1 teams as "likely to adversely affect" (LAA}, and determined, by NMFS as not likely to jeopardize the continued existence of Umpqua River cutthroat trout (Onchorynchus clarki clarki}. Effects determinations were made using a method recommended by NMFS for evaluating current aquatic conditions (the environmental baseline} and predicting effects of actions on them. This process is described in the document "Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale" (NMFS 1996).

The NMFS has determined that, for the purposes of section 7 consultations on federal land management activities that affect Umpqua River cutthroat trout, the Northwest Forest Plan (NFP), if fully implemented, will ensure that ongoing and proposed actions do not appreciably reduce the likelihood of survival and recovery of Umpqua River cutthroat trout. The full implementation of the NFP will provide habitat of sufficient quality, distribution, and abundance to allow Umpqua River cutthroat trout populations to stabilizer well distributed, across federal lands in the Umpqua River Basin. This determination is based on the relationship between the conservation measures associated with the NFP Aquatic Conservation Strategy (ACS) and the biological requirements of Umpqua River cutthroat trout.

To achieve this outcome, three requirements must be met: (1) the essential components of the NFP, including ACS objectives, watershed analysis, restoration, land allocations, and standards and guidelines, should be fully applied at the four spatial scales of implementation (region, province, watershed, and site or project:) ; (2) that all management actions should comply with all applicable land allocations and standards and guidelines; and, (3) t:hat all actions will promote attainment of the ACS objectives.

Although NMFS expects some effects to the environmental baseline from actions covered by this Opinion, the effects are expected to be minor because of project design or timing. The actions covered by this Opinion are listed in Table 1 of the Opinion. As stated in the Opinion, NMFS has determined that those actions are not likely to jeopardize the continued existence of Umpqua River cutthroat trout.

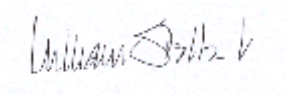
The Biological Assessments (BAs) submitted by the United States Forest Service (USFS) and BLM described all ongoing and proposed (through first quarter of FY 97) actions that may affect Umpqua River cutthroat trout. The BAs split "may affect" actions into two determination categories: 1) actions that may affect, but are not likely to adversely affect Umpqua River cutthroat trout (NLAA) , and 2) actions that may affect, and are likely to adversely affect Umpqua River cutthroat trout (LAA). The USFS and BLM requested concurrence from NMFS on the NLAA actions, and initiated formal consultation with NMFS on the LAA actions.

The NMFS concluded informal consultation on the "not likely to adversely affect" (NLAA) actions described in the BAs, in a September 9, 1996, letter from William Stelle, Jr. (NMFS) to the affected National Forest Supervisors and BLM District Managers.

NMFS will issue a separate biological opinion on the remaining actions described in the BAs which were determined by the Level 1 teams as lAA. The NMFS has not yet reached determinations on these actions pursuant to section 7 (a) (2) of the ESA and its implementing regulations, 50 CFR Part 402. These actions include: 1.) timber sales on the Roseburg BLM District and Umpqua NF listed in Table 2 (as amended by the September 12 and 20, 1996, BA amendments from Cary Osterhaus, BLM, to Elizabeth Gaar, NMFS, and the September 23, 1996, BA amendments from Don Ostby, USFS, to E:lizabeth Gaar) of the September 9, 1996 letter from William Stelle, Jr., NMFS, to the affected National Forests and BLM districts, 2) grazing and mining on all administrative units within the: Umpqua Basin, and 3) quarry management on the Roseburg BLM District.

If you have any specific questions please contact Lance Smith at (503) 231-2307 or Steve Morris at (503) 231-2224.

Sincerely,



William Stelle, Jr.
Regional Administrator

Enclosure

cc: Colonel Robert T. Slusar - Portland, Corps
Colonel Donald T. Wynne - Seattle, Corps
Lt. Colonel Donald R. Curtis, Jr. - Walla Walla, Corps
John Keys - Boise, BOR

Endangered Species Act - Section 7
Consultation

BIOLOGICAL OPINION

Ongoing and Proposed (through 12/31/96) Actions
Affecting Umpqua River Cutthroat Trout

Agencies: Coos Bay BLM District, Siuslaw National Forest, Medford BLM District, Siskiyou National Forest, Roseburg BLM District, Umpqua National Forest, Oregon

Consultation
Conducted By: National Marine Fisheries Service
Northwest Region

Date Issued: September 26,1996

Refer to: OSB1996-0662

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I. Background

Umpqua River cutthroat trout (*Onchorynchus clarki clarki*) was listed as endangered under the Endangered Species Act (ESA) by the National Marine Fisheries Service (NMFS) on August 9, 1996 (61 F.R. 41514; August 9, 1996). This evolutionarily significant unit (ESU) includes anadromous, potamodromous, and resident cutthroat trout populations occurring below natural, impassable barriers in the Umpqua River Basin. Biological assessments (BAs) describing the effects of ongoing and proposed actions (through first quarter FY 97) on Umpqua River cutthroat trout have been submitted to NMFS by Coos Bay Bureau of Land Management (BLM) District (BA received August 21, 1996), Umpqua National Forest (BA received August 23, 1996), Siskiyou National Forest (BA received August 26, 1996), Siuslaw National Forest (BA received August 29, 1996), Roseburg BLM District (BA received August 29, 1996), Medford BLM District (BA received August 29, 1996). These six Federal land management administrative units are referred to herein as “the six administrative units”.

Level 1 team (see USDAFS/USFWS/NMFS 1995 for definition) meetings were held on July 24, August 6, 14, and 20, 1996, to agree on the format and content of the BAs. Additional information was requested by NMFS from the Roseburg District and received on July 24, September 4, and September 6, 1996. Meetings with Level 2 and Level 3 staff were held on September 10 and 11 to discuss the Level 1 analysis results. Amendments to the Roseburg District BA were received on September 12 and 20, 1996. An amendment to the Umpqua National Forest BA was received on September 23, 1996.

The BAs described all ongoing and proposed (through first quarter of FY 97) actions that may affect Umpqua River cutthroat trout. The BAs split "may affect" actions into two determination categories: 1) actions that may affect, but are not likely to adversely affect Umpqua River cutthroat trout (NLAA), and 2) actions that may affect, and are likely to adversely affect Umpqua River cutthroat trout (LAA). The United States Forest Service (USFS) and BLM requested concurrence from NMFS on the NLAA actions, and initiated formal consultation with NMFS on the LAA actions. NMFS concluded informal consultation on the NLAA actions with a concurrence letter on September 9, 1996. Formal consultation will be concluded with the issuance of biological opinions covering the LAA actions.

The objective of this biological opinion is to determine whether ongoing and proposed actions (through first quarter FY 97) in these six administrative units are likely to jeopardize the continued existence of Umpqua River cutthroat trout. Actions covered by this Opinion are those determined by the Level 1 teams as "likely to adversely affect" (LAA), and preliminarily determined by NMFS as not likely to jeopardize the continued existence of Umpqua River

cutthroat trout. Effects determinations were made using a method suggested by NMFS for evaluating current aquatic conditions (the environmental baseline) and predicting effects of actions on them. This process is described in the document "Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale" (NMFS 1996) (see Attachment 3). Although NMFS expects some effects to the environmental baseline from these actions, the effects are expected to be insignificant because of project design or timing. Because critical habitat has not been proposed or designated for this ESU, this biological opinion does not address destruction or adverse modification of critical habitat.

II. Proposed Action

The "proposed action" is the ongoing and proposed actions (through first quarter FY 97) listed below in the six administrative units within the Umpqua River Basin which may affect Umpqua River cutthroat trout. Ongoing actions are defined as "[t]hose actions that have been implemented, or have contracts awarded, or permits issued and (within the range of listed anadromous salmonids) for which BAs have been prepared and submitted for consultation, prior to signature of the decision notice for the proposed action" (from Pacfish Interim Direction, cited in 1/23/95 Pacfish Biological Opinion p.52). All of the proposed actions are located in the Umpqua River Basin within the six administrative units, and this area is henceforth referred to as the "action area".

Table 1. Ongoing and proposed actions covered by this Biological Opinion.

All Administrative Units: These actions are listed programmatically; each program consists of multiple individual projects.	
Road Maintenance Road Decommissioning Culvert Replacements Aerial Fertilization Salmon Spawning Surveys Pump Chances (stream access for water removal)	Fish Habitat Restoration Project Construction/Maintenance Instream Structures and Large Woody Debris Placements Emergency Repair of Federally-Owned Roads (ERFO) Projects Dispersed Camping and Campground Maintenance Recreation Sites and Trail Construction/Maintenance Discretionary Right-of-Way Agreements and Road Use Permits Precommercial Thinning (within 1 site-potential tree of streams)
Siuslaw National Forest	**Siskiyou National Forest**
Mapleton Ranger District Beaver Salvage Timber Sale Unimproved Boat Landings Telephone Cable Special Use Meadow Maintenance for Wildlife	Powers Ranger District. Powers-Glendale Bike Path
Umpqua National Forest	
Tiller Ranger District. Coffin Timber Sale Deep Cut Timber Sale Mid-Jackson Timber Sale Brass Salvage Timber Sale Paradise Salvage Timber Sale Jade-eye Salvage Timber Sale Firlow Salvage Timber Sale Abes Wren Timber Sale (replacement volume) First Timber Sale (replacement volume) Last Timber Sale (replacement volume) Jack Timber Sale (yarding and hauling only) Gage Timber Sale (yarding and hauling only)	Zanita Timber Sale (yarding and hauling only) Redlick Timber Sale (yarding and hauling only) Beaver Thin Timber Sale (yarding and hauling only) I-5 Timber Sale (yarding and hauling only) Grave Salvage Timber Sale Elk Salvage Timber Sale Deadman Salvage Timber Sale Apple Salvage Timber Sale Skeleton Salvage Timber Sale Jeep Post-Harvest Treatment (Knutsen-Vandenberg) Siuya Post-Harvest Treatment (Knutsen-Vandenberg) Skip Post-Harvest Treatment (Knutsen-Vandenberg) Spike Post-Harvest Treatment (Knutsen-Vandenberg)
North Umpqua Ranger District. East Clover Timber Sale Whitecap Timber Sale Blowdown Salvage Honeytree Timber Sale (yarding and hauling only) Rumble Timber Sale (yarding and hauling only)	Diamond Lake Ranger District. Soda Springs Dam Structure Maintenance PPL Water Quality Monitoring Station Roughneck Timber Sale (yarding and hauling only) Watson Falls Demo Timber Sale
Roseburg BLM District	
Red Top Salvage Timber Sale Kernel John Timber Sale Louis Weaver Timber Sale Black Hole Timber Sale	Idelyld Timber Sale Conley Timber Sale Sampson Butte Commercial Thin Summit Creek Timber Sale Yellow Creek Mountain Timber Sale
Coos Bay BLM District	**Medford BLM District**
Umpqua Resource Area. Dames Delight Timber Sale Sagaview Timber Sale Luts Breakout Timber Sale Mose 15 Commercial Thin Fire Road Commercial Thin Progeny Site Commercial Thin Luchsinger Commercial Thin Sidewinder Commercial Thin	Glendale Resource Area. High Five Timber Sale McCollum Timber Sale McLawson Timber Sale E. Fork Evans Timber Sale Golden Panther Thin Timber Sale Mules Brew Timber Sale

III. Biological Information and Critical Habitat

The listing status and biological information for Umpqua River cutthroat trout are described in Attachment 1. While critical habitat has not been proposed or designated, Attachment 1 describes potential critical habitat elements for Umpqua River cutthroat trout.

IV. Evaluating Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA, as defined by the consultation regulations (50 CFR Part 402). Attachment 2 describes how NMFS applies the ESA jeopardy standards to consultations for Federal land management actions in the Umpqua River Basin. NMFS is unable at this time to determine whether actions included in this consultation are likely to destroy or adversely modify designated critical habitat. This determination can be made at a later date when Umpqua River cutthroat trout critical habitat is proposed or designated.

As described in Attachment 2, the first steps in applying the ESA jeopardy standards are to define the biological requirements of Umpqua River cutthroat trout and to describe the listed species' current status as reflected by the environmental baseline. In the next steps, NMFS' jeopardy analysis considers how proposed actions are expected to directly and indirectly affect specific environmental factors that define properly functioning aquatic habitat essential for the survival and recovery of the species. This analysis is set within the dual context of the species' biological requirements and the existing conditions under the environmental baseline (defined in Attachment 1). The analysis takes into consideration an overall picture of the beneficial and detrimental activities taking place within the action area. If the cumulative actions are found to jeopardize the listed species then NMFS must identify any reasonable and prudent alternatives to the proposed action.

A. Biological Requirements

For this consultation, NMFS finds that the biological requirements of Umpqua River cutthroat trout are best expressed in terms of environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of the ESU. Individual environmental factors include water quality, habitat access, physical habitat elements, channel condition, and hydrology. Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are also necessary for the survival and recovery of Umpqua River cutthroat trout. This information is summarized in Attachment 1.

B. Environmental Baseline

Current range-wide status of ESU under environmental baseline. NMFS described the current population status of the Umpqua River cutthroat trout ESU in its status review (Johnson et al. 1994) and in the final rule (August 9, 1996, 61 FR 41514). The fish counts at Winchester Dam on the North Fork Umpqua River provide the best quantitative source of cutthroat trout abundance in the Umpqua River Basin (see Attachment 1, Table 1). For the purposes of this biological opinion, it is difficult to determine the population status for the environmental baseline assessment of the entire ESU based only on Winchester Dam fish counts. In the absence of adequate population data, habitat condition provides a means of evaluating the status of Umpqua River cutthroat trout for the environmental baseline assessment, as explained in Attachment 1.

Action Area. The “action area” is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). The "action area" for this consultation thus includes Federal lands managed by the six administrative units within the Umpqua River Basin (see Table 2 below) along with intermittent and perennial stream reaches downstream of these lands.

The Umpqua River Basin stretches from the crest of the Cascade Mountains to the Pacific Ocean and encompasses approximately three million acres. The Umpqua River Basin is comprised of the Mainstem Umpqua, the North Umpqua, and the South Umpqua subbasins, each having unique physiographic features (Johnson et al. 1994). The Mainstem Umpqua subbasin consists of all watersheds downstream of the confluence of the North and South Umpqua Rivers, including the Smith River, Elk Creek, and Calapooya Creek watersheds.

The six administrative units manage approximately 47 percent of the Umpqua River Basin. The amount of Federal lands by subbasin is 32 percent in the Mainstem Umpqua, 52 percent in the North Umpqua, and 55 percent in the South Umpqua. Table 2 below provides an estimate of the total acreage managed by each of the six administrative units and the total non-Federal acreage within each subbasin of the Umpqua River Basin. A seventh administrative unit, the Eugene BLM District, includes approximately 3,000 acres in the Mainstem Umpqua subbasin. While included in Table 2 for informational purposes, the Eugene BLM District has no ongoing or proposed LAA actions for Umpqua River cutthroat trout included in this biological opinion.

Table 2. Land ownership within the Umpqua River Basin, by subbasin (approximate acres, from information in the BAs).

	Mainstem Umpqua	North Umpqua	South Umpqua	Total
Siuslaw NF	41,600	0	0	41,600
Coos Bay BLM	120,900	0	0	120,900
Roseburg BLM	132,700	82,600	179,400	394,700
Medford BLM	0	0	73,500	73,500
Siskiyou NF	0	0	3,200	3,200
Umpqua NF	0	363,500	364,500	728,000
Eugene BLM	3,000	0	0	3,000
Total Federal	298,200	446,100	620,600	1,364,900
Non-Federal	622,000	419,200	512,300	1,553,500
Total	920,200	865,300	1,132,900	2,918,400

Current status of ESU under environmental baseline within the action area.

Environmental baseline conditions within the action area were evaluated for all actions included in this Biological Opinion at the site, watershed and subbasin scales. This evaluation was based on the “matrix pathways and indicators” described in "Making Endangered Species Act Effects Determinations for Individual or Grouped Actions at the Watershed Scale' (NMFS 1996). This method, described in Attachment 3 to this Biological Opinion, assesses the current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species.

The summarized results of these assessments provide an overview of environmental baseline conditions in the three subbasins that comprise the action area (Table 3 below). Environmental baseline conditions are predominantly "not properly functioning" or "at risk" in the action area.

Table 3. Environmental baseline summary by subbasin for actions included in this Biological Opinion. Information source is the "Checklist for documenting environmental baseline and effects of the action" completed for each action contained in the BAs (each checklist is made up of approximately 17 habitat parameters and the total number of projects for which data was available = 117).

Administrative Unit	Number of actions by dominant functional level of habitat factors[1]		
	Properly Functioning	At Risk	Not Properly Functioning
North Umpqua Subbasin Actions			
Umpqua NF	2	7	9
Roseburg BLM	0	6	5
South Umpqua Subbasin Actions			
Umpqua NF	0	1	9
Roseburg BLM	0	1	6
Medford BLM	0	17	2
Siskiyou NF	1	0	0
Mainstem Subbasin Actions			
Roseburg BLM	0	15	4
Coos Bay BLM	0	3	18
Siuslaw NF	0	0	11
Total	3	50	64

[1] The dominant functional level (either properly functioning, at risk, or not properly functioning) is that in which most of the approximately 17 habitat parameters are categorized in the checklist completed for each action in the BAs. Both functional levels are counted if there is a tie.

Based on the best information available on the current status of Umpqua River cutthroat trout (Attachment 1), NMFS assumptions given the information available regarding population status, population trends, and genetics (see page 5 of Attachment 2), and the environmental baseline conditions within the action area (Table 3), NMFS concludes that the biological requirements of Umpqua River cutthroat trout are currently not being met under the environmental baseline within the action area. Significant improvement in habitat conditions is needed to meet the biological requirements for survival and recovery of the species. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of Umpqua River cutthroat trout due to the high level of risk Umpqua River cutthroat trout presently face under the degraded environmental baseline.

V. Analysis of Effects

A. Effects of Proposed Actions. The effects determinations in the BAs were made using a method for evaluating current aquatic conditions (the environmental baseline) and predicting effects of actions on them. This process is described in the document "Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale" (NMFS 1996 - Attachment 3). This assessment method was designed for the purpose of providing adequate information in a tabular form in BAs for NMFS to determine the effects of actions subject to consultation. The effects of actions are expressed in terms of the expected effect (restore, maintain, or degrade) on each of approximately 17 aquatic habitat factors in the project area, as described in the "checklist for documenting environmental baseline and effects of the action" (checklist) completed for each action.

The NMFS evaluates the effects of ongoing and proposed actions using the three requirements described in Attachment 1. These requirements are: (1) the essential components of the Northwest Forest Plan (NFP), including Aquatic Conservation Strategy (ACS) objectives, watershed analysis, restoration, land allocations, and standards and guidelines, should be fully applied at the four spatial scales of implementation (region, province, watershed, and site or project); (2) that all management actions should comply with all applicable land allocations and standards and guidelines; (3) and that all actions will promote attainment of the ACS objectives.

The results of the completed checklist for each action provide a basis for determining the overall effect of the action on the environmental baseline in the project area. All actions covered in this Biological Opinion were shown to degrade one or more of the 17 aquatic habitat factors described in the checklist. Degradation was attributed to minor, short-lived adverse effects to properly

functioning aquatic habitat factors which had the potential to cause a very low level of incidental take.

Timber Harvest

Timber harvest can increase sediment delivery to streams, reduce pool frequencies, reduce inputs of large woody debris into stream channels and onto adjacent streambanks, modify nutrient cycles important to fish, affect the food supply of fish, increase thermal variation, change micro-climates, and influence other functions important to Umpqua River cutthroat trout. Adequate streamside reserves help to reduce the effects of land management activities on streams and fish (Bisson et al. 1987). The streamside reserves proposed for the timber sales addressed in this opinion are adequate to minimize these potential effects.

Roads

Proposed road construction and the emergency repair of Federally-owned roads (ERFO) project could negatively affect essential spawning and juvenile rearing elements of Umpqua River cutthroat habitat by increasing erosion and sediment transport into streams. Instream fish habitat restoration projects could also result in short-term increases in sediment movement downstream. Fine sediment degrades salmonid spawning and rearing habitat (Chapman and McLeod 1987, Bjornn and Reiser 1991). Fine sediment deposition in stream gravel and in pools impairs salmonid spawning, rearing, and over-wintering habitat (Chapman and McLeod 1987). As sediment becomes deposited in interstitial spaces, rearing habitat for juvenile salmonids is also reduced. Bjornn et al. (1977) found reductions in carrying capacity during summer and winter as percent cobble embeddedness increased. Because implementation of project-specific mitigation measures are expected to reduce sediment input to streams from the projects to insignificant levels, effects on the aquatic environment from these actions are expected to be minimal.

Adverse effects to aquatic habitat factors from timber sales and road construction that may generate sediment are expected to be minor and short-lived because all of these actions have been designed and mitigated in accordance with the Northwest Forest Plan Aquatic Conservation Strategy (FEMAT 1993) objectives, land allocations and standards and guidelines. Despite the minor, short-term adverse effects, these actions maintain or restore essential aquatic habitat functions, and will not impede recovery of anadromous fish habitat, a long-term goal of the Northwest Forest Plan. The specific benefits of Northwest Forest Plan components for providing short-term protection and long-term recovery of aquatic habitats are described in Attachment 1.

Some actions that are designed to have a beneficial effect on fish over the long term; e.g., construction and/or maintenance of fish habitat restoration projects, placement of instream structures and large woody debris, replacement of culverts) may also cause minor, short-term degrading effects on instream habitat. Instream work associated with these actions is considered to have more than a negligible likelihood of incidental take (resident life forms are also included in the Umpqua River cutthroat trout ESU), however, all of the actions already include adequate measures to minimize take such as scheduling instream work late in the dry season when there are no eggs or alevins in stream gravels (see Incidental Take Statement).

B. Cumulative Effects. "Cumulative effects" are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The "action area" for this consultation includes lands managed by the six administrative units within the Umpqua River Basin and downstream intermittent and perennial stream reaches to the mouth of the Umpqua River.

The six administrative units contain 47 percent of the approximately 3 million acres in the Umpqua River Basin. The remaining 53 percent is made up of private, county and State land consisting primarily of agricultural and forestry land. A small, but rapidly increasing, percent of this non-federal land is being used for urban growth and expansion.

A substantial portion of spawning and rearing habitat for Umpqua River cutthroat trout and other salmonids occurs on USFS and BLM land managed by the six administrative units. Gradual improvements in habitat conditions for Umpqua River cutthroat trout and other anadromous salmonids are expected on Federal lands in the Umpqua River Basin as a result of Northwest Forest Plan implementation, as guided by ESA consultation.

Historically, agriculture, livestock grazing, forestry and other activities on non-federal land in the Umpqua River Basin have contributed substantially to temperature and sediment problems in the Umpqua River Basin (USDI 1995a,b,c; USDA 1995). Conditions on and activities within non-Federal riparian areas along stream reaches downstream of the USFS and BLM land presently exert a greater influence on river temperatures and probably contribute more sediment to the habitat of Umpqua River cutthroat trout and other anadromous salmonids in the Umpqua River Basin than the USFS and BLM land (USDI 1995a,b,c; USDA 1995).

Significant improvement in Umpqua River cutthroat trout reproductive success outside of USFS and BLM land is unlikely without changes in

agricultural, forestry, and other practices occurring within these non-Federal riparian areas in the Umpqua River Basin. NMFS is not aware of any future new or changes to existing State and private activities within the action area that would cause greater impacts to listed species than presently occurs. In fact, now that the species is listed as endangered, NMFS assumes that non-Federal land owners will take steps to curtail or avoid land management practices that would result in the take of Umpqua River cutthroat trout. For actions on non-Federal lands which the landowner or administering non-Federal agency believes are likely to result in adverse effects to Umpqua River cutthroat trout or their habitat, the landowner or agency should work with NMFS to obtain the appropriate section 7 or section 10 incidental take permit, which requires submission of a habitat conservation plan. If a take permit is requested, NMFS would likely seek project modifications to avoid or minimize adverse effects and taking of listed fish. Until improvements in non-Federal land management practices are actually implemented, NMFS assumes that future private and State actions will continue at similar intensities as in recent years.

VI. Conclusion

The ongoing and proposed actions on the six USFS and BLM administrative units within the Umpqua River Basin considered in this Biological Opinion (actions listed in Table 1), as described in the BAs (USDI 1996 a,b,c; USDI a,b,c) are not likely to jeopardize the continued existence of Umpqua River cutthroat trout. NMFS used the best available scientific and commercial data to apply its jeopardy analysis (described in Attachment 2), when analyzing the effects of the proposed actions on the biological requirements of the species relative to the environmental baseline (described in Attachment 1) , together with cumulative effects.

In reaching this conclusion, NMFS determined that the survival and recovery of Umpqua River cutthroat trout life forms within subpopulations that comprise the ESU can be assured by providing sufficient prespawning survival, egg-to-smolt survival, and upstream/downstream migration survival rates through the protection and restoration of properly functioning freshwater habitat. Properly functioning freshwater habitat can in turn be assured if land management agencies fully and properly implement the essential components of the Northwest Forest Plan; i.e., the Aquatic Conservation Strategy (ACS) objectives, land allocations (including key watersheds and riparian reserves) and standards and guidelines.

NMFS applied its evaluation methodology (described in Attachment 3) to the proposed actions listed in Table 1 and found that the proposed actions would cause minor, short-term adverse degradation to some essential habitat elements. However, adverse habitat effects from

the proposed actions would not reduce prespawning survival, egg-to-smolt survival, or upstream/downstream migration survival rates to a level that would appreciably diminish the likelihood of survival and recovery of Umpqua River cutthroat trout. Furthermore, NMFS determined that because all of the actions addressed in this Biological Opinion are fully consistent with the NFP ACS objectives described above, the long-term conservation goals of the NFP to restore currently degraded habitats and allow cutthroat trout populations to stabilize, well distributed across Federal lands in the Umpqua River Basin, would not be impaired by implementation of these actions.

VII. Conservation Recommendations

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. The following conservation recommendations are consistent with these obligations and should be implemented by the six administrative units within the Umpqua River Basin to the maximum extent possible:

1. Apply NMFS' “Matrix of Pathways and Indicators” during watershed analyses as a means of characterizing the environmental baseline for anadromous salmonids at the watershed scale.

2. Include recommendations in watershed analysis reports for identifying and prioritizing actions needed to maintain and restore properly functioning salmonid habitat in the watershed. For example, identify chronic erosion problems such as the Haney Creek slide on Roseburg BLM District; design and implement restoration projects to correct identified problems.

3. Review information developed through watershed and river basin analyses to determine if the key watershed network in the Umpqua River Basin needs to be expanded or otherwise modified to incorporate additional Umpqua River cutthroat trout strongholds, refugia, or core habitat areas.

4. With the participation of all six administrative units, coordinate long-term timber harvest planning for the Umpqua River Basin at river basin and watershed scales. Apply the results of watershed analyses, large-scale assessments (such as the Umpqua River Basin Assessment being conducted by the SW Oregon Provincial Interagency Executive Committee), and other

relevant information to plan timber harvest in a manner that will assure the attainment of ACS objectives within each watershed with Federal land ownership in the Umpqua River Basin.

5. Design yarding systems for timber sales in a manner that does not retard or prevent attainment of ACS objectives; e.g., avoid operating ground skidders within riparian reserves or unstable soils; suspend logs when yarding across perennial streams, etc.

6. With the participation of all six administrative units, coordinate short- and long-term road construction, maintenance and restoration plans for each watershed within the Umpqua River Basin, including reciprocal rights-of-way agreements and road use permits. Develop a comprehensive approach for reducing the net road mileage and road impacts to aquatic habitat, with particular priority on reducing road densities within key watersheds to #2 miles/mi^2 and decommissioning valley bottom roads that restrict stream meanders or otherwise affect riparian functions. Review (and amend if necessary) road maintenance practices to ensure ACS objectives are being met throughout the Umpqua River Basin.

7. In addition to applying the Northwest Forest Plan standards and guidelines for new road construction, apply the following recommendations when designing and decommissioning roads to achieve ACS objectives:

   a. Limit the construction of new permanent and semi-permanent roads to stable areas and ridgetops. Permanent roads are those that are used after the end of the contract, and semi-permanent roads are those that are used for longer than one dry season but are decommissioned at the end of the contract.

   b. Decommission semi-permanent roads less than one year after the harvest units they were built to access have been logged. The definition of "decommissioning" for this purpose includes all necessary measures to restore pre-road hydrologic functions and to eliminate the risk of road-related sediment delivery to streams; e.g., removal of culverts, decompaction of the road surface (ripping), outsloping, waterbarring, removal of fills, revegetating with native species, and/or barricading of the roadway to vehicular traffic.

   c. When permanent and semi-permanent roads are constructed, reduce road density in the same watershed (20-200 mi^2) by decommissioning roads using the following guidelines:

      1. Reduce road density by at least the equivalent mileage of the new road <u>and</u> an additional length as supported by watershed

analysis. If watershed analysis is not available, a general guideline would be to decommission twice the length of new road constructed.

2. The reduction in road density through decommissioning should be completed prior to or concurrent with completion of new road miles.

d. All temporary roads should be installed and decommissioned during the dry season of the same year (usually May 15 to October 15). All temporary roads will be decommissioned per the definition above.

8. Consult with the State to assess water withdrawals and verify water rights prior to issuance of discretionary rights-of-way permits for domestic water use.

9. Review locations or pump chances for water removal from streams to determine if they are causing adverse effects on fish. Where adverse effects are found to occur, take appropriate actions to eliminate the effect; e.g., decommission or relocate the pump chance; screen intake hoses, etc.

10. Review aerial fertilization practices and identify measures necessary to ensure compliance with ACS objectives.

The NMFS requests notification when any of these conservation recommendations are implemented to ensure that we are kept informed of actions that minimize or avoid adverse effects, or those that benefit listed species or their habitat.

VIII. Reinitiation of Consultation

Consultation must be reinitiated if: the amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect the listed species in a way not previously considered; the action is modified in a way that causes an effect on the listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16).

Based on the information in the BAs, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Biological Opinion. To ensure protection for a species assigned an unquantifiable level of take, reinitiation of consultation is required: (1) if any action is modified in a way that causes an effect on the listed species that was not previously considered in the BAs and this Biological Opinion; (2) new

information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16).

IX. References

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this opinion in addition to the BAs and additional information requested by NMFS and provided by the six administrative units.

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Chapman, D.W. and K.P. McLeod. 1987. Development of criteria for fine sediment in the Northern Rockies Ecoregion. Work assignment 2-73. Battelle Columbus Laboratories. EPA Contract No. 68-01-6986.

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producing watersheds in eastern Oregon and Washington, Idaho, and portions of California (PACFISH). January 23.

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USDA (U.S. Dept. of Agriculture, Forest Service) 1995. Little River Watershed Analysis, Umpqua National Forest. Version 1.1 plus appendices.

USDI (U.S. Dept. of the Interior, Bureau of Land Management). 1995a. Paradise Creek Watershed Analysis, Coos Bay BLM District.

USDI (U.S. Dept. of the Interior, Bureau of Land Management). 1995b. Canton Creek Watershed Analysis, Roseburg BLM District.

USDI (U.S. Dept. of the Interior, Bureau of Land Management). 1995c. West Fork Cow Creek Watershed Analysis, Medford BLM District.

USDA (U.S. Dept. of Agriculture, Forest Service). 1996a. Biological Assessment for ongoing and/or proposed actions (through first quarter of FY97) on the Umpqua National Forest which "may affect" Umpqua River cutthroat trout. Umpqua National Forest. Roseburg, Oregon.

USDA (U.S. Dept. of Agriculture, Forest Service). 1996b. Biological Assessment for ongoing and/or proposed actions (through first quarter of FY97) on the Siuslaw National Forest which "may affect" Umpqua River cutthroat trout. Siuslaw National Forest. Corvallis, Oregon.

USDA (U.S. Dept. of Agriculture, Forest Service). 1996c. Biological Assessment for ongoing and/or proposed actions (through first quarter of FY97) on the Siskiyou National Forest which "may affect" Umpqua River cutthroat trout. Siskiyou National Forest. Grants Pass, Oregon.

USDI (U.S. Dept. of the Interior, Bureau of Land Management). 1996a. Biological Assessment for ongoing and/or proposed actions (through first quarter of FY97) on the Roseburg BLM District which "may affect" Umpqua River cutthroat trout. Roseburg BLM District. Roseburg, Oregon.

USDI (U.S. Dept. of the Interior, Bureau of Land Management). 1996b. Biological Assessment for ongoing and/or proposed actions (through first quarter of FY97) on the Medford BLM District which "may affect" Umpqua River cutthroat trout. Medford BLM District. Medford, Oregon.

USDI (U.S. Dept. of the Interior, Bureau of Land Management). 1996c. Biological Assessment for ongoing and/or proposed actions (through first quarter of FY97) on the Coos Bay BLM District which "may affect" Umpqua River cutthroat trout. Coos Bay BLM District. North Bend, Oregon.

X. Incidental Take Statement

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

A. Amount or Extent of the Take

The NMFS anticipates that the actions covered by this Biological Opinion (Table 1) have more than a negligible likelihood of resulting in incidental take of Umpqua River cutthroat trout because of detrimental effects on aquatic habitat parameters including substrate quality, turbidity, suspended sediment levels, and peak/base flows, all of which directly affect their life history. Because of the inherent biological characteristics of aquatic species such as Umpqua River cutthroat trout, however, the likelihood of discovering take attributable to these actions is very small. Effects of management actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on the species' habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Biological Opinion, the best scientific and

commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable."

Based on the information in the BAs, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Biological Opinion. To ensure protection for a species assigned an unquantifiable level of take, reinitiation of consultation is required: (1) if any action is modified in a way that causes an effect on the listed species that was not previously considered in the BAs and this Biological Opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16).

B. Reasonable and Prudent Measures

NMFS believes that the incidental take of Umpqua River cutthroat trout that is likely to occur as a result of the actions included in the Biological Opinion has been adequately minimized by project design and mitigation. Therefore reasonable and prudent measures to further reduce this incidental take are not necessary.